

AMATEUR RADIO AMATEUR RADIO AMATEUR RADIO AMATEUR RADIO

SEPTEMBER, 1957

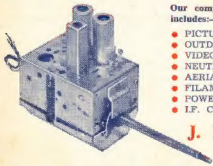


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6H6 .. 5/-	7A6 .. 5/-	832A .. 70/-	VT32 .. 10/-
C.R. Tubes—VCR511B 12", £2/10/0; 5BP1 5", £1/15/0; 5CP1 5", £2. Fragile—Personal Shopping Only.			
VT501 v.h.f. power pentode, 6.3v. filament, 7.5 watts output, full ratings up to 120 Mc, octal base .. 7/6			
English VT127 (4v. power pent., 20 watt, octal base), 4/11			

Following list are ex				Disposals, guaranteed—			
1K5 ..	5/-	6C5 ..	10/-	6SJ7G	10/-	12K8 ..	10/-
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1L4 ..	5/-	6G8 ..	10/-	6SL7	12/6	25AC5	10/-
1S5 ..	10/-	6H6 ..	5/-	6U7 ..	10/-	CV92 ..	5/-
1T4 ..	10/-	6L7G	7/6	12A6 ..	10/-	EF50 ..	3/6

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AFX1 Chassis Top Deck. Contains 28 ceramic 7-pin miniature valve sockets. Host of condensers, resistors A very good buy at 45/-. Postage 5/-.

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Meters—0-100 Ma., 2" square, scaled 0-300, new .. £1

Meters—0-150 Ma., 2" square, new .. 21/6

Meters—0-40 amp. A.C. 2 1/2" round type .. 25/-

Meters—0-20v., A.C. 2 1/2" round type, new .. 25/-

No. 11 Transceivers, complete with all Genemotors, Valves, and Cables. Personal Shoppers only .. £5

American Loran Receiver R9A-APN4, 16 valves. Part of Loran Indicator. Equipment contains 3 6B4s, 1 5U4, 1 VR105, 2 2X2s, 1 6SJ7, 4 6SK7s, 1 6H6, 1 6SN7, 1 6SL7, 1 6SA7, lots useful parts. New in case. No packing charge. Gift at £7/10/0

AT5 Transmitters with valves and dust covers, contains three 807s and two 6V6s .. £5/17/6

AT5 Transmitters, less valves and dust covers .. £3

SCR522 American Transceiver. Frequency: 100 to 150 Mc. In clean condition, less valves .. £10

SCR522 Receivers, less valves .. £5

SCR522 Transmitters, less valves .. £5

BC733D Crystal Locked Receiver, tuning range 108-120 Mc. I.F. 6.9 Mc. Valve line-up: three 717As, two 12SG7s, one 12SH7, two 12SR7s, one 12SQ7, one 12A6. Also contains six miniature relays. Packed ready for rail. Gift at £5/17/6

AR8 Vernier Dials, low and high freq. Brand new .. £2

Calibration Prospect Dial only .. 10/- each

108 Mark III. Portable Transceiver, complete with valves, less headphones, aerial and microphones .. £7/10/0

Co-ax Cable, 50 ohm .. 2/- yard

Co-ax Cable, 100 ohm, 202 length .. 2/- yard

Co-ax, indoor type, cotton covered .. 1/- yard

Co-ax Plugs and Sockets, American Ampenol .. 5/- pair

Co-ax Right-Angle Plugs, American Ampenol .. 2/6 each

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915 Kc. Crystals .. £3 each

3.5 Mc. Marker Crystals, latest miniature type complete with socket .. £2/10/-

Amateur Band Crystals, any frequency .. £2

Gold Plated Marker and Commercial Crystals, price on request. Delivery in seven days.

Following is a list of Crystal Frequencies available for immediate delivery. £2 each—

2081 Kc.	5835 Kc.	6175 Kc.	6775 Kc.	7162.8 Kc.
2103.1 Kc.	5437.5 Kc.	6200 Kc.	6800 Kc.	7163 Kc.
2112.5 Kc.	5450 Kc.	6225 Kc.	6825 Kc.	7174 Kc.
2150 Kc.	5530 Kc.	6250 Kc.	6850 Kc.	7175 Kc.
2208.1 Kc.	5633.333 Kc.	6275 Kc.	6875 Kc.	7200 Kc.
2442.5 Kc.	5655.333 Kc.	6300 Kc.	6900 Kc.	7225 Kc.
2443 Kc.	5700 Kc.	6325 Kc.	6925 Kc.	7250 Kc.
2732 Kc.	5722.222 Kc.	6350 Kc.	6950 Kc.	7275 Kc.
2760 Kc.	5725 Kc.	6375 Kc.	6975 Kc.	7300 Kc.
2979 Kc.	5744 Kc.	6400 Kc.	7000 Kc.	7325 Kc.
2990 Kc.	5750 Kc.	6425 Kc.	7002.5 Kc.	7350 Kc.
3380 Kc.	5775 Kc.	6450 Kc.	7003 Kc.	7375 Kc.
3500 Kc.	5825 Kc.	6475 Kc.	7005 Kc.	7400 Kc.
3533 Kc.	5850 Kc.	6497.5 Kc.	7010 Kc.	7425 Kc.
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3537 Kc.	5875 Kc.	6525 Kc.	7012 Kc.	7475 Kc.
3892 Kc.	5900 Kc.	6525 Kc.	7018 Kc.	7500 Kc.
3925 Kc.	5925 Kc.	6547.9 Kc.	7021.7 Kc.	7525 Kc.
4096 Kc.	5950 Kc.	6550 Kc.	7025 Kc.	7550 Kc.
4172 Kc.	5975 Kc.	6561.111 Kc.	7032 Kc.	7575 Kc.
4205 Kc.	6000 Kc.	6575 Kc.	7032.6 Kc.	7600 Kc.
4285 Kc.	6025 Kc.	6600 Kc.	7050 Kc.	7625 Kc.
4445 Kc.	6075 Kc.	6650 Kc.	7075 Kc.	7650 Kc.
4600 Kc.	6083.3 Kc.	6675 Kc.	7100 Kc.	7675 Kc.
4815 Kc.	6100 Kc.	6700 Kc.	7125 Kc.	7700 Kc.
4930 Kc.	6125 Kc.	6725 Kc.	7145 Kc.	7725 Kc.
5000 Kc.	6150 Kc.	6750 Kc.	7150 Kc.	7750 Kc.
			7155 Kc.	7775 Kc.

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WI BROADCASTS

All Amateurs are urged to keep these frequencies clear during, and for a period of 15 minutes after, the official Broadcasts.

VK3WI: Sundays, 1100 hours EST, 7145 Kc.; 2000 hours EST, 144 Mc. No frequency checks available from VK3WI. Intra-state working frequency, 7050 Kc.

VK3WI: Sundays, 1130 hours EST, simultaneously on 2873 and 7145 Kc., 87.5 and 140.35 Mc. Intra-state working frequency 7135 Kc. Individual frequency checks of Amateur Stations given when VK3WI is on the air.

VK4WI: Sundays, 0900 hours EST, simultaneously on 3560 and 14943 Kc., 3560 Kc. channel is used from 0915 hours to 1015 hours each Sunday for the W.L.A. Country hook-up. No frequency checks available.

VK5WI: Sundays, 1000 hours SAST, on 7145 Kc. Frequency checks are given by VK5MD and VK5WI by arrangements on all bands to 96 Mc.

VK6WI: Sundays, 0930 hours WAST, on 7145 Kc. No frequency checks available.

VK7WI: Sundays, at 1600 hours EST, on 7145 Kc. and 3675 Kc. No frequency checks are available.

VK8WI: Sundays, 1000 hours EST, simultaneously on 3.5, 7, 14 and 144 Mc. Individual frequency checks of Amateur Stations given when VK8WI is on the air.

AMATEUR RADIO

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EDITORIAL



BOOKS

Books, children of the brain.—(Swift, "The Tale of a Tub")

Accustomed to being told of the modern miracles of Television, Atomic Power and Space Rockets, the average person is inclined to forget some other wonders which have been close at hand for centuries. In this sphere the book is an interesting example.

By means of a book, we are able to know the thoughts of a person long dead. By means of the written word and the printed page, we are able to preserve for posterity much of that which is worth while in our own time.

But the book has an immediate function as well as being a preserver of knowledge. The book is a teacher.

In spite of modern facilities, it is not always possible or convenient for us to attend the classes and lectures of the men with knowledge to offer. But the words of those men on the printed page can speak

to us whenever we are willing or have time to listen.

The world of electronics is an everchanging one. Those who can speak authoritatively on a particular subject soon place their thoughts in book form and those books soon find their way into libraries.

It is most important that the modern Amateur keeps abreast of his hobby and here at least is one way. Use the Divisional Library, the Public Library, and above all make sure that your own personal book-shelf is well stocked.

One word from the research engineer, a circuit drawn by an expert can save hours of frustration.

The solution to many a thorny problem is often a simple matter on which our memory has played us false. We only require that tiny spark and all is simplified.

That tiny spark, the answer, is found by opening a book.

FEDERAL EXECUTIVE.

THE CONTENTS

All-Band Preamplifier Without Band-Switching	3	A Two Metre Long Yagi	9
Valve Data—12AU7	3	Amateur Call Signs	10
90° R.F. Phase Shift Networks, Part Two	4	YL Corner	12
Modifying the AR7 Receiver, Part Five	6	S.w.l. Section	12
Columbus Marathon Contest	6	Fifty-Six Megacycles and Above	13
National Field Day, 1958	7	DX Activity by VK2QL	14
		Prediction Chart for Sept., '57	14
		Federal, QSL, and Divisional Notes	15

MODEL "1XA" CRYSTAL MICROPHONE INSERT



AUSTRALIAN MADE — — FOR AUSTRALIAN CONDITIONS



FITTED WITH PLATED REAR SHIELD TO ELIMINATE HUM PICK-UP

- Patented crystal unit guarantees outstanding efficiency and performance.
- Protected against ingress of moisture with approved moisture sealed crystal element.
- Small — compact — lightweight — durable.
- Will not blast from close speaking.
- Precision engineering ensures realistic reproduction and high output with long life and dependable operation.

- The only unit available with a genuine sintered metal filter.
- Good high frequency response ensures excellent speech reproduction.
- Aluminium diaphragm mechanically protected and frequency controlled by "Zephyril" filter.
- Australian made throughout.
- Only carefully selected cements used throughout, to suit Australian climatic conditions.

TECHNICAL DETAILS

Rochelle salt crystal microphones are perhaps the most widely used for all types of service where quality speech and music reproduction at high output levels is a requirement. They are dependable in performance and when fitted with the appropriate "Zephyril" filter, their frequency response may be adjusted to suit any application or requirement.

This crystal microphone requires to be terminated with a high value parallel load of the order of 1 to 5 megohms for best results.

The mass of the moving parts is small, hence the sensitivity is high and a high efficiency is achieved.

Light gauge solder lugs are provided so that excessive heat in soldering will not be transmitted to the crystal element.

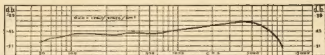
When mounted in a microphone cage, it is recommended that the insert be suspended in rubber, to eliminate shock and vibration.

One of the connecting lugs is directly connected to the case and care should be taken to solder the metal shield of the microphone cable to this solder lug, keeping the unscreened portion of the centre conductor as short as possible to eliminate hum pick-up.

All crystal elements are mounted on high grade suspension pillars, being fixed thereto with a good quality cement, thus ensuring stability and long life.

Case $1\frac{1}{8}$ " diameter (rear), $\frac{3}{8}$ " thickness, 1-13/16" overall diameter (front) with filter fitted.

Frequency Response = 60-6,500 c.p.s.
Output Level = -45 db (0 db = 1 volt/dyne/cm²)
Impedance = Model 1XA Grid 1 — 5 megohms.



Approximate Frequency Response Curve

AVAILABLE FROM ALL LEADING TRADE HOUSES

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Phone: BL 1300

All-Band Preamplifier Without Band-Switching

BY L. H. DUNCAN,* VK5AX

MUCH has been written from time to time about the advantages of using a pre-selector or R-F'er in front of the station receiver, but not all Hams realise that these advantages are very real.

The pre-amplifier will improve the overall gain of any receiver considerably and, what is more important, it will give the whole set a greatly improved signal-to-noise ratio, and will enable weak DX stations to be copied that before could only just be heard.

Most of us use an aerial matching device between the transmitter and aerial as a matter of course, but in the usual Ham shack very little consideration is given to the problem of accurately matching the receiver to the aerial. On this score alone the text books promise a gain of up to 30 db.—five S points.

Having seen the light and decided to build one of these magical devices, we are immediately faced with the problem of how to cover all the popular bands and it is at this stage that the interest generally wanes. Therefore, many will be interested in the following design which covers all bands from 80 through 10 metres without any form of band-switching and uses only one coil!

Reference to the circuit will show that an all-band tuning arrangement has been used in the grid circuit of a 6AC7 or similar tube which is aperiodically coupled to another 6AC7 wired as a cathode follower. A most efficient form of output coupling which matches the impedance of the aerial terminal of the set to which it is attached without causing any loss of signal voltage. The output lead should be reasonably short and shielded.

The tuning condenser is a broadcast two-gang of almost any type. Naturally the better the insulation, the better the results. Because of the large capacity range, the size of the coil is not at all critical. Too many turns and you won't cover ten metres—too little and you miss out on 80 metres. Twenty turns of about 20 gauge wire on a 1" former has proved to be about right. The coil is centre-tapped. The aerial winding, of six turns, is wound on at the earth end of the tuning coil.

Screen voltage of the pentode 6AC7 is variable so that the gain of the tube may be run as high as possible without instability. (It is also of help in reducing cross-modulation when the 100-wattter next door starts up!)

In the interests of stable operation, it is advisable to isolate the grid and plate circuits of the first tube as much as possible by placing a shield across the socket. It is also an advantage to mount the coil and condenser above the chassis and to make connection to the 6AC7 grid via a small feed-through insulator—but don't get the idea that the unit is in any way "cranky." These are just precautions one would take with any high gain r.f. stage. The rest

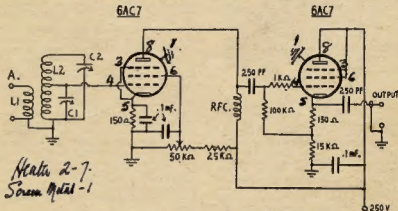
of the circuit is straight forward, but if you use any other tube for the cathode follower, use one in which the suppressor is not connected internally to the cathode.

Several of these units have been built up over the last six months and have greatly improved the performance of the receivers, including a "640", BC342, Hallicrafter, and 75A3.

As usual with these all-band tanks, the bands do not appear in orderly pro-

gression across the dial, but no confusion should result from this. While proving the design, slight trouble with self-oscillation at one frequency near 7 Mc. was encountered. This was traced to an undesired resonance in the r.f. choke in the plate circuit of the r.f. stage and changing this to another type effected the cure.

Any queries will be gladly answered by letter. Good luck, and better listening.



An All-Band Pre-Amplifier Without Switching

C1/C2—Broadcast two-gang.

L1—8 turns.

L2—20 turns, 1 inch former, centre-tapped.

VALVE DATA

12AU7

MEDIUM-MU TWIN TRIODE

The Radiotron 12AU7 is a miniature 9-pin valve containing two similar medium-mu triodes in one envelope.

Either of the triodes may be used in a television receiver as a vertical or horizontal deflection oscillator or as a synchronising pulse separator and amplifier.

Base: 9-pin miniature.

Socket connections:

- Pin 1—Plate of Unit No. 2.
- Pin 2—Grid of Unit No. 2.
- Pin 3—Cathode of Unit No. 2.
- Pin 4—Heater.
- Pin 5—Heater.
- Pin 6—Plate of Unit No. 1.
- Pin 7—Grid of Unit No. 1.
- Pin 8—Cathode of Unit No. 1.
- Pin 9—Heater centre-tap.

Electrical Data

	Series	Parallel
Heater voltage	12.6	6.3 volts
Heater current	0.15	0.3 amp.

CLASS A1 AMPLIFIER (Each Unit)

Maximum Ratings:	
Plate voltage	300* volts
Plate dissipation	2.75* watts
Cathode current	20* Ma.
Grid voltage:	
Negative bias value	50* volts
Positive bias value	0* volts

Peak heater-cathode voltage:

Heater negative with respect to cathode	200* volts
Heater positive with respect to cathode	200*† volts

Characteristics:

Plate voltage	100	250	volts
Grid voltage	0	-8.5	volts
Amplification factor	20	17	
Plate resist. (approx.)	6500	7700	ohms
Transconductance	3100	2200	amhos
Grid bias (approx.) for plate current of 10 mA	—	-24	volts
Plate current	11.8	10.5	Ma.

OSCILLATOR

(for operation in a 625-line, 25-frame system)

Maximum Ratings (each unit):

D.c. plate voltage	300*	300*	volts
Peak negative-pulse grid voltage	400*	600*	volts
Cathode current:			
Peak	60*	300*	Ma.
Average	20*	20*	Ma.
Plate dissipation	2.75*	2.75*	watts
Peak heater-cathode voltage:			
Heater neg. with respect to cathode	200*	200*	volts
Heater pos. with respect to cathode	200*†	200*†	volts

Maximum Circuit Value:

Grid-circuit resistance, 2.2* megohms

* Maximum.

† The d.c. component must not exceed 100 volts.

* 16 King Street, Gawler, S.A.

90° R.F. Phase Shift Networks

PART TWO

BY N. L. SOUTHWELL,* VK2ZF

QUARTER-WAVE CO-AX LINE NETWORK

In Fig. 7 is shown what is probably the simplest, and at the same time, the most bulky 90° p.s.n., a quarter-wave-length of co-axial line.

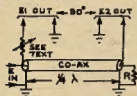


Fig. 7.—Quarter Wave Co-ax Line Network.

Quarter Wave of Co-ax Line at the Operating Frequency.
 $R = \text{Co-ax } Z$.

Calling to mind transmission line theory, it will be remembered that points a quarter wavelength apart on a line differ in phase by 90°, also when a line is terminated in its characteristic impedance, the a.w.r. along the line becomes 1:1. Hence the voltages measured at points quarter-wave apart will be 90° apart in phase and be very close to the same amplitude. The loss in the line would cause a small drop in the amplitude of E2 compared to E1. Should it be found necessary to compensate for the amplitude difference, a small carbon pot. can be included in the circuit where indicated.

To efficiently adjust the network, a g.d.o. is required and also some means of measuring r.f. resistance, such as a bridge or an antennascope. Alternatively, a v.t.v.m. could be used in place of the bridge or antennascope. The writer used a Maxwell Bridge which is simple and quite satisfactory.

The line is grid dipped to the operating frequency, or slightly higher, by means of the g.d.o., whilst the line is terminated by the input capacity of the bal. mod., to be fed from the line. Do not use any resistive termination on the line while grid dipping.

The g.d.o. and the bridge are then used to determine the actual characteristic impedance of the cable used. To do this some non-inductive carbon resistors are required, their values can be determined by the bridge.

If using a v.t.v.m. the actual value of the resistors will be unimportant, but they should be approximately that of the cable impedance. The g.d.o. is set to the frequency used above and coupled to the line. The terminating resistance at the far end is varied until the voltage measured at both ends of the line is the same.

The termination then in use is the correct one for the line.

Using the bridge and the g.d.o. set to the previous frequency the line is terminated at the far end by one of the available resistors and a reading obtained on the bridge. It is more than

probable this reading will differ from that of the terminating resistor. The line impedance can be found from the formula:

$$Zl = \sqrt{Zb \times Zt}$$

where—

Zl = line impedance in ohms.

Zb = reading obtained on bridge in ohms.

Zt = value of termination in ohms.

From this point it is a matter of using the bridge to build up a termination of that value, and then as a double check, test it, using it as a termination for the line.

The fact that both the velocity constant and the line impedance cannot be taken for granted may seem strange to some, but the velocity constant of co-ax varies from batch to batch and from one make of line to another, a difference in length of 1 foot has been observed in the length of quarter-wave lines used on the 14 Mc. band. Likewise, the impedance also varies between batches of manufactured cable, and from one manufacturer to another.

The voltage available from this type of network is somewhat restricted unless a fair amount of power is used, as the impedance of all types of co-axial cable is not great.

The cable length may be tied up in a coil without detriment to its performance.

Both ends of the sheath should be grounded and the end of the co-ax should be brought out as close as possible to the balanced modulator feed points.

If the co-ax is cut a little on the short side, it is possible to lengthen the line electrically by means of a small trimmer condenser connected across the output of the line and in parallel with R in Fig. 7. High stray capacity in the equipment may necessitate a slight shortening of the line, as stray capacity across the terminating resistor would have the effect of lengthening the line.

DELAY LINE TYPE OF NETWORK

Fig. 8 shows yet another circuit of an r.f. p.s.n. This type of network is a distributed constant delay line.

These lines are being manufactured in the U.S.A. commercially in values up

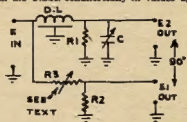


Fig. 8.—Delay Line Type of Network.

D.L. = Delay Line.

$R1 = R2 = \text{Delay Line } Z$.

$R3$ = Variable resistance to equalize E1 and E2 amplitudes.

C = Small trimmer for vernier adjustment of phase shift.

to around 2,000 ohms, and a few s.s.b. stations in America have used them on 3.5 Mc.

The lines are widely used and well known in commercial radio circles, but Amateurs have never bothered about them.

The commercial article is made up as follows: A fine gauge insulated wire is wound onto a piece of tubing which serves as a former. The whole is then wrapped with insulating tape of high quality which later becomes the dielectric of the line. Over the tape is woven a braided screen of insulated wires, forming the outer conductor of the line, the whole is then covered with a layer of p.v.c. for protection.

The physical sizes of the elements making up the line determine its impedance.

The time delay required to give a 90° phase shift at any given frequency is obtained from the formula:

$$T = \frac{10^9}{4F}$$

where—

T = time delay in millimicroseconds.

F = operating freq. in megacycles.

The manufacturers of commercial delay lines quote a definite time delay figure for a given physical length of line and, after calculating the delay time required from the above formula, it is a simple matter to determine the length of line required. It works out to a matter of inches at the normal Amateur band frequencies, for lines having a phase shift of 90°.

The line is cut to have slightly less delay than is required, and the delay time is increased over a small range by a small trimmer condenser placed across the end of the line, as indicated by C in Fig. 8. This condenser acts in the same manner as the trimmer condenser mentioned in connection with Fig. 7, to lengthen the electrical length of the line, and hence the delay time. This enables the delay time to be adjusted to the exact value required.

There is a loss of energy in the network, and to enable the amplitudes of E1 and E2 to be balanced, a voltage divider comprising a carbon pot. and a non-inductive resistor are used in the E1 voltage feed circuit. These components are shown as R3 and R2 respectively in Fig. 8.

Alternatively the E1 feed circuit may have the carbon pot. (R3) inserted in series with the lead and R2 dispensed with, both methods have been satisfactorily used. To obtain the best results from this network, the effect on the phase shift of all components and circuit strays, between the common r.f. voltage source and the two bal. mods., additional to the delay line, should be taken into account.

Distributed constant type delay lines are relatively easy to make for use on Amateur frequency bands. The writer is using one at the present time on 14 Mc.

The subject of delay lines is too involved to be gone into in this article, but the experimentally inclined may be

* 80 Dutton Street, Yagoona, N.S.W.

interested in the following brief description and information regarding some of the lines used.

The lines were constructed from short lengths of co-ax cable as follows:

Slit the outer p.v.c. sheath carefully lengthwise with a knife, and slip it off. Compress the outer metal braiding of the co-ax which is then exposed, from both ends towards the centre, this action causes the diameter of the braid to increase and loosen on the core of the cable. The metal braid is then slipped off the core and carefully placed on one side.

The centre conductor of the cable is not required, it can be withdrawn if such action is possible; if not, the ends of the conductor can be cut off flush with the ends of the cable poly. core, and its presence ignored.

The next step is to close wind a coil of fine wire on the poly. core of the co-ax cable for a length of several inches.

The start and finish of the winding can be held in place on the core with adhesive tape. The completed winding and the core are then given a good coating of clear lacquer. When the lacquer has almost dried a layer of empire cloth, cut to size, is wrapped around the winding and tied in place until the lacquer has completely dried. Then the ties can be taken off and the co-ax metal braiding previously removed is slipped back over the coil with its empire cloth covering. The braid is stretched to make sure it is firmly against the coil over the whole of its length and then securely taped in place.

It will be found that up to 1" of the original length of the braid will be lost due to the fact that the braid now fits over a core of larger size than previously. The loss in length is no cause for worry, as at least a 4" or so is required at each end of the coil for the securing tape, placed there when the coil was wound. The braid should, however, cover the full length of the coil.

In operation, the braiding is grounded and the two ends of the coil are the input and output of the line.

The time delay per unit length of this type of line is less than that of the commercial lines because the outer braid is not composed of insulated wires woven together and grounded at the ends of the line.

Having constructed a line, one must find out (1) its impedance, (2) its electrical length or delay time.

The test equipment required is, again, a g.d.o. and a bridge or an antenna-scope and some non-inductive resistors of various values up to around 600 ohms.

The electrical length of the line is found by coupling the line to the g.d.o. in the same manner as when grid dipping a quarter wavelength of co-ax, however in the case of co-ax we already have a fairly accurate idea how long the line is electrically, in this case, we initially have no idea. Tune the g.d.o. over a wide frequency range and jot down all the frequencies at which a dip is registered on the g.d.o. meter, due to the presence of the coupled line. These dips will occur at frequencies where the line is $\frac{1}{4}$, $\frac{1}{2}$, $1\frac{1}{4}$, $1\frac{1}{2}$ wavelengths, etc., long.

After four or five frequencies are listed, it will be apparent what the approximate frequency is where the line is quarter wave long. Check around this frequency to obtain the exact figure. If the line is too long, un-wind turns from the line until the required frequency is obtained. If you find the line is too short the best plan is to wind up another longer one; joins in the line coil are not recommended. Naturally during the above process the far end of the line is open circuited. You may have to tune carefully for some of the dips indicated on the g.d.o. meter, as not all of the points required for an initial tabulation of the resonant frequencies give a large dip.

The impedance of the line is found in a similar manner to that described when dealing with the co-ax line network of Fig. 7. One word of warning though. Delay line can have a fair loss, and it will not be satisfactory to use a v.i.v.m. in place of a bridge to find the line impedance.

When the line is terminated in its correct impedance, tuning the g.d.o. over a wide frequency band will produce no change in the reading of the bridge.

A number of lines have been built with impedances ranging from 300 ohms to 115 ohms. Details of two of the lines are as follows:

90' electrical length ...	2.4 Mc.	25 Mc.
Impedance ..	800 ohms	315 ohms
Type of cable used ...	"PT29M"	"Uniradio 70"
Wire, B. & S. enamel close wound ...	36 gauge	36 gauge
Length of winding ...	$5\frac{1}{2}$ inches	14 inches

In case the cable types are unfamiliar, the outside diam. of the original co-ax cables were (approx.): PT29M, 7/16 inch; Uniradio 70, $\frac{1}{2}$ inch.

Remember, the capacity across the termination of the cable will tend to stretch the line electrically; on the 3.5 Mc. band, each 1 pF. of capacity increases the delay by about 1 millimicrosecond. From experiments conducted on 14 Mc. it would appear that a greater capacity than the above is required to effect a similar change in time delay there.

Now, having completed the description of the various types of r.f. p.a.n.s. that have been used, we are in a position to consider more fully some of the factors, covered earlier, that determine the details of an r.f. p.s.n. for use in any given circuit.

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Modifying the AR7 Receiver

PART FIVE

BY G. M. BOWEN,* VK5XU

BAND SPREADING THE BAND E COIL BOX

For this procedure it will be necessary to refer to the previous article Part IV. In that article the coil connections, the placement of the trimmer and series condensers are shown by diagram so that there should be no trouble in identifying the components as they are referred to.

In coil box E the range has been restricted to a 2:1 ratio (from 12.5 to 25 Mc.) by including a variable capacitor of about 70 pF. in series with the main tuning gang to obtain electrical bandspread. As a general rule this arrangement does not alter the upper frequency range since the capacity of the series capacitor will be large compared to that of the tuning gang. At the lower frequency end the series capacitor, having the smaller capacitance, will have maximum effect on the frequency, raising it as the capacitance is decreased.

The series capacitor therefore reacts in this coil box in the same way as the paddler does in the usual b.c. receiver alignment.

Hence by decreasing this capacitor value the band coverage can be adjusted for any number of degrees. At this stage, if you have not already worked on the 28 Mc. band coil box, you are advised to study carefully the alignment procedure set out in that text.

The 14 Mc. band, fortunately, comes on the higher half of the dial readings and it is not necessary to alter the coils. In some coil units, in order to bring the frequency of 14200 Kc. onto the 250 degree mark, it may be necessary to add a further capacitor across the trimmer. If so, choose a silvered-mica or a zero-coefficient ceramic, or if you really wish to do the job, play around with the correct negative coefficient ceramics in the oscillator section until no temperature change drift occurs. This modification is a worthwhile addition if you have the time—and the patience!—to spend many hours at the game. But remember, you can overdo the size of the capacitor and make the drift reverse, so check carefully against a standard that you know cannot drift—and I don't mean a crystal oscillator either! WWV or Radio Australia, or some equally good standard must be used.

The value of the additional capacitance required will depend upon the amount of bandspread required, and also of course on the type of air trimmers in the coil box for these vary in make and capacity. My AR7 drifts to a lower frequency as it warms up and about 5 Kc. compensation is required at 15 Mc.

In Band E the coils have no slugs, and it is better not to try to include them to lower the frequency. If an aerial trimmer capacitor has not already been included in the modifications it should be done, as described in

an earlier article. The exclusion of this control was a bad mistake for it is virtually impossible to align four stages and maintain the same sensitivity over such a wide range of frequency. This is especially so where different antenna systems are used.

ALIGNING PROCEDURE

Centre frequency 14200 Mc. Start with the oscillator coil L4A. Short out the tuning gangs for aerial, r.f.1 and r.f.2; connect the Modulated Oscillator, or Signal Generator, to the grid of the converter valve with a 500K resistor to ground (having removed the grid cap connection to start with)—Mod. Oscillator on 14.2 Mc. with the crystal filter off, tune in signal which should appear at about 370 degrees.

Alter C8 to a smaller value and to hold the signal, the dial reading will have to be increased, i.e. more capacitance is added by the main tuning gang. Adjust C7 trimmer to return the dial reading to 370 degrees. N.B.—C8 should be moved a very small amount each time.

Gradually work back and forth now from C8 to C7 until the required bandspread is obtained, with the dial reading for 14.2 Mc. on 250 degrees. If C7 will no longer bring the upper frequency of 14.4 Mc. onto the dial reading, then open the box and add approximately 50 pF., reducing the capacity of C7 accordingly to approximately a quarter into mesh.

Put the box together again and without touching the dial adjust the trimmer C7 until 14.2 Mc. again appears at 250 degrees.

At this stage, it is a good plan to check that the oscillator is on the high side of the signal by swinging the mod. oscillator to at least 13 Mc. If no signals appear then you are correct.

Continue this jiggling process of C8 versus C7 until the coverage is approximately 200 degrees of bandspread for the 400 Kc. For general band coverage this seems to be adequate but if you are a c.w. man, then go the limit for the low frequency end as the one which is most affected by this type of band-spreading system.

So much for the oscillator coil box. Remove each of the others and modify them to correspond approximately to the oscillator box. Note carefully that the stud numbers are in a different sequence for each box, so refer to Part IV.

The settings for C1 to C6 inclusive should be approximately that for C7 and C8. Fit the coil boxes together and the unit should be ready for aligning. Don't touch the oscillator section.

In coil box E the series capacitors are adjusted first, at the low frequency end of the range with the trimmers C1, C3 and C5 receiving second preference at the high end.

Set the mod. oscillator output to maximum and after removing all the

shorting devices from the tuning gang, proceed to the usual two spot alignment process.

Mod. oscillator on 14.0 Mc.; adjust C6, C4 and C2 for maximum signal after picking up signal with main tuning; across to 14.4 Mc. and adjust C5, C3 and C1 (note the order of work—towards the antenna input with the mod. oscillator output, from the r.f.2 box); back to 14.0 Mc. and so on gradually decreasing the signal from the mod. oscillator (see Part IV.).

Final adjustment of the capacitors should be made with the antenna noise input only.

If after a couple of weeks you have not succeeded with this modification, you won't need the receiver for you will have given Amateur Radio away together with the hair you have torn out!

So, good luck!

Next part will be on crystal filters and the AR7 filter in particular, so until then, I'm back to the pick and shovel.

COLUMBUS MARATHON CONTEST

To commemorate the famous voyage by Christopher Columbus during which he discovered the American Continent, the Istituto Colombiano di Genova is inaugurating an annual contest for Radio Amateurs in gold medals and a certificate will be awarded to the Italian Radio Amateur who in the 70 days preceding 15th October of each year, establishes contact with the greatest number of Amateur Radio Stations outside Italy. A second gold medal and a certificate will be awarded to the non-Italian amateur who contacts during the same period the greatest number of Italian stations including those in Trieste, Sicily and Sardinia. Briefly the rules of the Contest are as follows:

Licensed Amateurs in all parts of the world may participate. Foreign Amateurs are to work as many stations as possible in Italian territory.

For the purposes of the contest the frequency bands on which valid contacts can be made are divided into three groups: Group A includes the 3.5, 7, 14, 31 and 35 Mc. bands. Group B the 144 Mc. band, and Group C the 430 Mc. band. The Contest starts at 0900 hours G.M.T. on 3rd August and ends at 2300 hours on 15th October of each year.

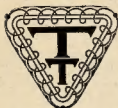
Any two-way contact between an Italian station and one outside Italian territory counts. Signal report must be exchanged using the RS(M) 33 (5) for telephony, and RST 336 for telegraphy. Each valid contact on the bands A up to and including 35 Mc. (Group A) will score one point. Contact on 144 Mc. will score two points, and on 430 Mc. four points.

Candidates for the awards must forward to the promoting Committee a statement duly dated the following year a claim indicating the score obtained in the contest. The Committee, on the basis of the claims submitted, will request the Radio Amateurs with the highest score to send an extract from the station log giving the following information: Date, hour G.M.T., frequency band, type of emission, power input to the p.a. of the tx, call sign of the station worked, signal report transmitted, report received, points claimed. The extracts from the station logs must be true copies of the logs by two licensed Radio Amateurs of the same country as the claimant.

In the event of a tie in the scoring, the lesser band, type of emission, power input in transmission. Judging the decision of the Judging Committee is final. The address of the promoting committee is: Civico Istituto Colombiano, Tronco Radio, Columbus Marathon, Palazzo Turin, Genoa, Italy.

* 73 Portrush Road, Toorak Gardens, S.A.

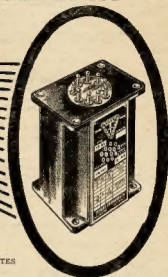
Page 7



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A TWO METRE LONG YAGI

BY I. F. BERWICK,* VK3ALZ

OVER the past few months the writer has been using an 18 element long yagi on 2 metres. The results have been highly satisfactory and so much superior to the previous 5 over 5 that he feels that this type of beam is a distinct step forward.

The writer claims no credit for the design of this beam, full marks go to W2NLY and W6QKI, who did the original work, however the method of matching is the writer's own and he feels that it is superior to anything used previously at his QTH.

Anyone interested in the development of the long yagi should read the January 1956 issue of "QST."

This antenna, being a high Q type, is effective only over a bandwidth of 2 Mc., i.e. 1 Mc. each side of the frequency for which it is cut. Also the presence of any metal objects in the immediate field of the antenna distorts the pattern and ruins its performance. So it is preferable to site the antenna ten feet or so away from any other antenna system.

The aperture of the long yagi (sometimes known as the captive area) is not the frontal area (which is quite small), but is calculated from the beam widths in the E and H planes. This calculation is given in "QST," January 1956. For the 32-ft. model, it is approx. 20 ft. in diameter. A low Q array would require to occupy the same area to give the same performance.

So for 2 metre DX the long yagi wins on all counts—

- (1) High gain.
- (2) Low frontal area, hence less wind resistance.
- (3) Simpler construction, no phasing sectors, one driven element, etc.

Details of element lengths and spacings are given in the chart. These figures are critical and must be strictly adhered to. Note that three reflectors are used in a triangular arrangement. This system is highly recommended, as a large improvement in front-to-back and minor lobe reduction is achieved with this.

MATCHING SYSTEM

The matching system is a modification of the well known gamma match, suitable for 50 or 70 ohm co-ax feeders and plumbers' delight arrays.

In the gamma match an air spaced variable is used to cancel out the reactance of the gamma section.

In the VK3ALZ system the air spaced variable is replaced with an o/c stub one-quarter wavelength in length, which of course has a capacitive reactance.

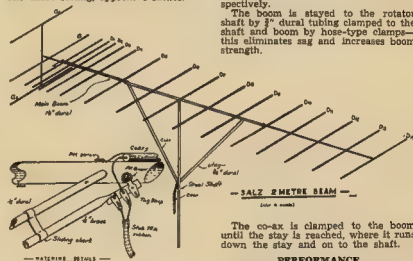
Advantages of the latter system are: (1) Simpler construction, no condenser housing to construct; no chance of condenser break-down due to moisture; more compact; light weight (an important consideration as the matching

system is out on the end of 16-ft. length of boom). (2) Once the matching is completed, the adjustment is permanent—the writer has detected no change in s.w.r. over a period of three months.

In practice, the stub is made out of 75 ohm ribbon. Its final length being approx. 5 inches; more of this later.

MATCHING PROCESS

With the s.w.r. bridge in the line and the transmitter on the frequency you propose to use for DX work, and a stub of 10 inches of 75 ohm ribbon connected, also the sliding short of the gamma section at about 4 inches out from the centre of the boom, start pruning the stub, watching the s.w.r. drop, until say a 4:1 s.w.r. is reached. Then adjust sliding short for an s.w.r. minimum. Proceed now to prune the stub, readjusting the short as you go, until a final minimum is reached. This should be 1.3:1 or better. The stub length for RG8/U is approx. 5 inches. The short setting, approx. 4 inches.



Element	Length inches	Spacing inches
Reflector a(1)	40 1/2	5
Reflector a(2)	40 1/2	
Reflector b	42 1/2	15
Driven*	38 1/2	7
Director 1	37	7 1/2
" 2	36 1/2	7 1/2
" 3	36 1/2	16
" 4	36 1/2	32
" 5	36 1/2	32
" 6	36	32
" 7	35 1/2	32
" 8	35 1/2	32
" 9	35 1/2	32
" 10	35 1/2	32
" 11	35 1/2	32
" 12	35 1/2	32
" 13	35 1/2	32
" 14	35	32

* Use 1/2" dural.

If you go too far and cut too much off the stub, just solder a new length on and start again.

The radiation resistance is quite low, probably in the region of 10 to 12 ohms, so make a good job of all connections. With 100 watts input the currents are quite high.

CONSTRUCTIONAL DETAILS

The boom is 33 feet long, using 1 1/2" dural tube; the centre 10 feet being reinforced with 1 1/2" tubing. The full length of tubing is unlikely to be available, but shorter lengths can be spliced with no loss in strength. See sketch for details.

The elements are of 1/2" dural wire mounted in 1/4" holes drilled in the boom and held in place with binding of nylon fishing line.

The two rear reflectors are mounted on a minor boom of 1/2" dural tube which passes through the boom vertically. These reflectors are spaced 20 inches above and below the boom respectively.

The boom is stayed to the rotator shaft by 3/4" dural tubing clamped to the shaft and boom by hose-type clamps—this eliminates sag and increases boom strength.

The co-ax is clamped to the boom until the stay is reached, where it runs down the stay and on to the shaft.

PERFORMANCE

Horizontal beam width to the half power points has been measured at 26°, using an accurate S meter. According to the designers, the beam width should be also 26° in the vertical plane. The writer has been unable to measure this accurately, but it is very sharp, as on the ground under the antenna no field strength worth mentioning is detectable, but 50 yards out an 0.2-5 Ma. field strength meter goes hard over.

The beam is 40 feet high.

Gain: Db. figures are always open to argument, but using the formula and assuming E and H plane beam widths are identical, gain comes out at something over 18 db.

Front-to-back at least 30 db. on the S meter.

Minor Lobes: The two largest minor lobes occur at about 30° each side and are at least 15 db. down.

* Lot 33 Loongana Avenue, Glenroy, Vic.

AMATEUR CALL SIGNS

AMENDMENTS TO JUNE, 1957

NEW CALL SIGNS

VK— Australian Capital Territory

1VP—E. Penkiss Station, Reid House, Canberra, A.C.T. Postal 32 Kennedy St., Kingston, A.C.T.

New South Wales

2ND—J. B. Deering, Oak Rd., via Gosford

2NF—R. Innes, C/o. Dixon, "Piccadilly," West Market St., Richmond

2NN—T. Freese, "Bonnie Doonee," Kurrajong Island

2TQ—T. T. Tatham, 1359 Pacific Highway, Turramurra

2AFS—Home Command Amateur Radio Club, C/o. F/O W. E. Dixon, Home Command Hq., M.A.A.F., Penrith

Victoria

3BN—H. C. C. Hargraves, 2 Graham St., Albert Park

3LW—L. M. Stone, 18 Douglas St., Rosanna

3SJ—S. D. Wheeler, 31 Bernard G. Nth. Kew

3AEQ—A. E. Finch, C/o. Radio Australia, Shepparton

3AHO—W. R. Kempe, Kyvalley Rural Delivery

3APJ—F. J. Dettman, 49 Hutton St., Kyneton

3APT—G. W. Glover, 5 Miller St., Alphenington

3AWD—W. D. Mather, 79 Carroll St., Gardiner

3ZCY—J. M. Ely, 15 Sharp St., Northcote

3ZEC—R. H. Hall, 8 Service St., North Emsdon

3ZEP—D. C. Paton, 20 Scotts St., Bentleigh

3ZFH—E. R. Harris, 48 Havelock Rd., Hawthorn

Queensland

4GX—F. Barroclough, 16 Gall St., Kedron, Brisbane

4WA—W. J. Barker, 14 Which St., Windsor

4ZAX—D. R. Horgan, Park Rd., Yeerongpilly

4ZAY—R. J. Conway, Anne St., Aitkenville, Townsville

South Australia

5FY—R. A. Catmur, C/o. A. V. Ferguson, 8th St., Gawler West

5FA—S. G. Hart, 20 Whitford Rd., Elizabeth

5SA—T. Grierson, 108 Disagonal St., Bomerion Park

5ZCY—L. M. Choute, 20 Sizer St., Lower Mitcham

Western Australia

6AD—A. W. Stewart, South Western Highway, Armadale

6JM—A. Moran, C/o. Base Squadron, R.A.A.F. Pearce

Tasmania

7WY—J. F. Westley, Rosebery

Papua-New Guinea and Other Islands

SDX—Rabaul Amateur Radio Club, Park St., Rabaul, N.G.

5JF—J. M. Fulton, Station: Direction Island

Cocos-Keeling Group, Postal C/o. Cable and Wireless Ltd., Cocos Island, Indian Ocean

5NM—N. O. Myers, C/o. Dept. of Posts and Telegraphs, Lae, N.G.

CHANGES OF ADDRESS

VK— New South Wales

2DX—C. E. Krog, 14 Jurell St., Beverly Hills

2KL—H. A. Preston, 29 North Rd., Ryde

2WL—Wireless Institute of Aust., N.S.W. Div., Quarry Rd., Dural

2ZN—J. Brand, 4 King Edward St., Rockdale

2ADH—C. C. Deamon, 11 Brothers St., Dundas

2ALX—D. S. Kirby, 19 Dalton St., Orange

2AQC—D. F. Lloyd, 18 Cox Ave., Bondi

2ATT—J. C. Treby, Charles St., Tweed Heads

2AUS—S. S. George, 8 Woodbury St., Marickville

2AVJ—W. B. Jones, 30 Little Rd., Bankstown

2AWI—Wireless Institute of Aust., N.S.W. Div., 10 Clarence St., Sydney

2AWZ—D. Andrews, 21 Warwick St., North Ryde

2ZAC—W. R. Cox, 25 Gardinia St., Narwee

2ZAU—K. Woodward, 28 Collins St., Belmore

2ZBF—J. K. Doherty, 1/11a Silex Rd., Mosman

2ZCR—M. Marsden, 43 Houston Rd., Kingsford

2ZDB—A. J. Bowman, 55 Curtis Ave., Taren Pt.

Queensland

3CL—W. T. Lucas, 2 Ellen St., Parkdale

3JD—J. Rich-Phillips, Station: Narre Warren

(Temps.), Postal C/o. M. Chaffey, 18 David St., East Preston

3GE—G. E. Every, 15 Shenfield Ave., Bonbeach

3KO—M. A. O'Keefe, 429 High St., Golden Square, Bendigo

Victoria

3BL—W. T. Lucas, 2 Ellen St., Parkdale

3JD—J. Rich-Phillips, Station: Narre Warren

(Temps.), Postal C/o. M. Chaffey, 18 David St., East Preston

3GE—G. E. Every, 15 Shenfield Ave., Bonbeach

3KO—M. A. O'Keefe, 429 High St., Golden Square, Bendigo

Western Australia

6AD—A. W. Stewart, South Western Highway, Armadale

6JM—A. Moran, C/o. Base Squadron, R.A.A.F. Pearce

Tasmania

7WY—J. F. Westley, Rosebery

Papua-New Guinea and Other Islands

SDX—Rabaul Amateur Radio Club, Park St., Rabaul, N.G.

5JF—J. M. Fulton, Station: Direction Island

Cocos-Keeling Group, Postal C/o. Cable and Wireless Ltd., Cocos Island, Indian Ocean

5NM—N. O. Myers, C/o. Dept. of Posts and Telegraphs, Lae, N.G.

3MI—W. A. McLeod, 42 Capon St., Chadstone, S.E.10.

3NZ—R. H. Hall, 17 College Gt., Black Rock

3OM—R. S. Fisher, Station: Fairview Ave., Wheelers Hill, Postal 7584 Glenhuntingly Rd., Glenhuntingly

3QM—R. L. Leamouth, 5 Sutton Ave., Portland

3RY—R. F. Miller, 29 Iawn Rd., Noble Park

3UC—N. Culver, 11 Bay St., Queenscliff

3VR—R. H. Dever, 143 Pallat St., Beaumaris

3AGX—D. H. Davis, Lot 25 Team Rd., Doncaster

3AGE—M. G. Esam, 103 Kepler St., Warrnambool

3ALO—A. L. Lowe, 28 Ramsay Ave., East Kew, K.5

3AMP—J. M. Palmer, 223 Henty St., Casterton

3AMZ—B. G. Powell, C/o. I. McGuffie, Camp St., Beechworth

3APH—P. E. Playsted, 36 Kosyong Koot Rd., Hawthorn

3AYW—K. Y. Wenborn, 38 Waverley Rd., Chadstone

3ZCA—R. J. Skevington, Hunter St., Kellor

Queensland

4LE—L. H. Cox, "Adventure Downs," Spring-sure, via Emerald

4NP—N. F. Wilson, 11 Oreri Road, Yeronga

South Australia

6DT—T. P. Drake, 13 Lindley St., Greenacres

6NB—R. E. Bell, 328 Brighton Rd., Mave

6OP—P. R. Roper, Devonshire Rd., Hawthorne

6VC—J. G. Mason, 29 Fuller St., Parkside

Western Australia

6CF—C. L. Parkas, 11 Recreation Rd., Kalamunda

6GV—T. P. Gardner, 35 Bedford Rd., Mt. Pleasant

6HT—H. A. Tarbolton, Station: Lower King River, Albany

6JR—J. R. Wood, 1081 Wellington St., West

6KY—T. H. Mitchell, 27 Oxford St., Kensington

6QO—F. R. Gray, 69 Duff St., Merredin

6ZAA—W. J. Howse, Flat 3, 81 Outram St., West Perth

Papua-New Guinea and Other Islands

6EB—K. S. Mullen, C/o. Mandated Airlines, Lae, N.G.

Queensland

4DW—C. D. Wright

4SB—S. E. Molen, Transferred to N.S.W.

South Australia

5BQ—A. W. Baker

5NC—R. G. Clayton

Western Australia

6TM—F. Wiseman

Tasmania

7CJ—A. E. Finch, Now VK3AEQ

7IB—J. G. Gillies

Papua-New Guinea and Other Islands

9OG—D. F. Lloyd

Queensland

4DW—C. D. Wright

4SB—S. E. Molen, Transferred to N.S.W.

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7CJ—A. E. Finch, Now VK3AEQ

7IB—J. G. Gillies

Papua-New Guinea and Other Islands

9OG—D. F. Lloyd

Queensland

4DW—C. D. Wright

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YL CORNER

BY PHYL MONCUR*

This month we have the story of another YL of quite long standing, namely, 3HQ, Mrs. Marg (formerly Hutchings) Williams. Marg's connection with Amateur Radio dates back to the 1920's when her brother, Alan, who holds the call 3HL, and her mother, Mrs. Elizabeth Hutchings, who at that time held the call 3TLM, were both DX enthusiasts and the Hutchings family were famous for their family activity on the bands from their station at Callawadda. Mrs. Elizabeth Hutchings, who passed on in 1943, was one of the very earliest YLs in VK to receive her licence and most certainly the first in Victoria. Alan 3HL is still of course very active and also takes a great interest in the rural fire brigade network.

Marg's interest in Amateur Radio developed quite slowly, however. At first she was content with two licensed operators in the house and just occasionally listened in. One day after enjoying a programme of music from W land she tuned into a c.w. signal and found herself feeling irritated that she could not understand it and her mother and brother could and this is where her career as an Amateur really all started. She then set forth to learn the code, this was followed by the theory, which she found quite fascinating, and in 1938 she herself received her licence.

With her mother she shared a 3-wire xtal controlled rig and during the 1930's she was very active working all hours late into the night and then up again early in the mornings to capture the DX and this went on until the war came. Then, as a war effort, she took up nursing with the R.A.A.F. nursing service, and at one time was stationed at "Froggall," where, because of her qualifications in radio, she managed to do some precise work with the code. Later she was posted to Japan. Through the R.A.A.F. she met her husband, Flying Officer Clive Williamson, and they were married in Japan. Today they live in a comfortable modern home in Bentleigh and Marg has her hands well and truly full running her home and caring for their three young children, two girls and a boy aged 4, 6 and 7 years, and so radio must bide its time for a while.

However, she has lots of memories, among which is a large silver cup presented to her by the Victorian Division of the W.I.A. as winner of a 5-point relay contest which she won in 1937. She also has a radio snap album in which I found photos of several well known radio personalities, both from DX countries and nearer home. There was one of a good looking curly headed youth and underneath the call 3KCR, Ken Rankin, and another of a debonaire gentleman sporting a very smart moustache and you don't need three guesses to know who this was—why Max

Howden, 3BQ, of course. There was also a photo of her original rig which was on show at a hobbies exhibition in 1933.

Although she hasn't been active on the air for a few years, she still corresponds and exchanges photographs with several of her old DX pals, W2CC and CTAD are among these and she also has a card which she prizes greatly, it is from Prince Tsungku Ahmad, VS3AE.

She recalls an early radio convention which was held at the Hutchings' homestead on their property at Callawadda where they accommodated a large number of Rams for a weekend and they had make-shift beds made up in every available corner in the house. Probably many of the old-timers will remember this weekend.

As we chatted a light came into her eyes, a light of very pleasant memories and although home and family keep her too busy to take an active part in Amateur Radio at present, I'm sure the time will come when Radio will come into its own again and we'll be hearing that once familiar call of 3HQ going fast to the boards calling CQ DX once again.

S.W.L. SECTION*

NEW SOUTH WALES

Stan Abbey writes again to let us into the secrets of the boys in Coolamon. Since purchasing a car he has been very busy building a garage and, yes, he's also built it to allow for the inclusion of a shack. Another addition to his gear is a 100 vx covering from 8.5 to 8 Mc. Stan intends to build up some converters to feed into it. Jack Ashley and Stan recently helped Jim JAO extend his tower up about five feet and were almost as agile as monkeys when the job was completed. No doubt Jim is teaching them Amateur Radio the practical way. Study the ticket under Jim's supervision has been progressing steadily for both of the boys and the big day comes up in about two months' time. Best of luck to 'em.

VICTORIA

Dave Jenkin, WIA-13039 writes and tells me he has now gone back to using his t.r.f. rx, having pulled his superhet to pieces and thrown the chassis in the river. Recently, due to heavy rain, Dave was cut off from the town, but managed to carry on cheerfully. He says it doesn't worry him as long as he has plenty of tobacco and batteries. Dave states that he considers his t.r.f. rx as good as any for 14 Mc. c.w. in which he is mainly interested.

I have received a short note from a s.w.l. in Reaseville by the name of G. Weber, asking for details of our Group. By the time he reads this he should have the required information.

* Compiled by Ian J. Hunt, WIA-13007, 211 St. George's Road, Northcote, N.I.B. Vic.

Recently several members of the Group paid a visit to Mr. R. V. Wilson, 3SD, to see his station. The boys found it most interesting, the tx being located in his garage and remotely controlled from the house. Those who went on this visit said they really enjoyed themselves, and we thank Mr. Wilson for having some of our members along.

July Group Meeting.—At this meeting we enjoyed having Mr. R. Gillies, of the Dept. of Defence Production, to talk to us about Japan. Mr. Gillies spent some time in that country working for the Australian Government just after the war. His talk was most varied, interesting and often most amusing. He kept us so entertained that the meeting was in danger of running on into the small hours of the morning. Possibly the best compliment we could pay him would be to re-iterate the suggestion of one of those present, that he should come back again soon and tell us even more of his experiences. We thank you very much indeed, Mr. Gillies, for coming along to speak to us.

Future Programme.—On Sept. 2 we are holding a visit to TV Station HSVI. This is being looked forward to with much interest by members. We hope to tell you more of our visit next month, and we will also have had our trip to the Newport Power Station by the time that this is read.

As office-bearers for the Group are not re-elected until the end of August no further arrangements have been made for visits and lectures. However, you can rest assured that an interesting and full programme will soon be lined up for you, so come along to the Group meetings and find out all about it. We meet at the W.I.A. rooms, 191 Queen Street, Melbourne, at 8 p.m. on the last Tuesday of each month.

As my current term as Secretary of the Victorian Group has now ended, I wish to thank all those who have assisted the Group in any way and we will also have written to help keep these notes going, and I hope you will continue doing so in the future. Remember, it is only through your co-operation we can keep Short Dave Listening to the fore.

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50 Mc. W.A.S.

Call	Cer. Add. No. Cntr.	Call	Cer. Add. No. Cntr.
VK1WJ	13 4	VK4AEZ	10 1
VK1PZ	9 3	VK4KDA	11 1
VK2VW	9 3	VK6GM	12 1
VK4RY	2 3	VK4ACL	14 1
VK4HR	4 3	VK4ZD	16 1
VK4HR	4 3	VK4ZD	17 1
VK4WV	3 1	VK4ZBC	8
VK4R	8 1	VK4FW	15
VK4R	7 1		

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DX ACTIVITY BY VK2OL†

Some of the regulars are missing this month and judging from the comments of those I did hear from, it is probably due to their inactivity. Not a word from VK5 and have not heard any of them on. Probably getting organised for the R.D. Contest.

NEWS AND NOTES

The Aland Islands are well in the news at present with activity by OH0NB, OH2RD/0, OH2KQ/0, and OH3UI/0. Their period of activity in some cases has finished (2ACX).

VR6TC will send QSLs and is reported to be building a beam (Rod de Balfour).

LA2JACB should be heard on the air this month and is **DM2ACB (7LZ)**. **LA2JE/P** has been operating from Spitzbergen. Don't know of his being heard out here.

KPSAL has no regular postal services or Post Office facilities at his QTH.

XW8AB has sent out a big batch of cards to VK Bureaux and they date as far back as August '55.

ACTIVITY

8.5 Me.: BERS195; VK9AD (Norfolk Is.) and

WEPDO,
1 Mo. 2AIR: PK8AT*, 2AMB: VK9NT*, DU-
TSV*, JA7BE*, KR8AC*, PY8YS*, HP3JL*,
6EJ, VS2ER*, Rod de Balfeur: W, KH6, VE,
JA, HP3JL, BERS195*, FK8AT, JA, FA8BG

K4IKR, KM5AX, VPWCW, Z38CH
 M6, C_w 9AB, CKA4D, KC0U5V,
 CX0CX, ZL107, VP8CC, VR7N,
 ZL3AL, UH7AA, Z51NG, ZS1RM, FE-
 54K, IACK OH2RD, OH2RD, OH5U,0,
 SAIRC, FYTYP, KP3BL, VR3E, ZCBAL,
 K4IKR, SAIRK, KP3BL, K4IKR,
 K4IKR, EABD, ZL3AA, KP4AL,
 TIEVA, VK0AS, FB8XX, ZC3RF, XZ7TN,
 FB8Z, ZD4CM, VP4LU, OH5U,0,0,
 BCG, KLTWA, FB8Z, ZW6AA, HIBBE,
 FB8Z, ZW6AA, HIBBE,
 FPA8F, VP6BL, VP7Y, FZ1BS, DKK, H,
 DBE, ZCBAL, WIA-138, KC0U2, EABRN,
 PA0CE, HIBBE, XZ7TF, VP6BL, ZW6AA,
 K4IKR, HIBBE, ZC3RF, ZCBAL,
 KZLBS, OQ5GO, FY3DB, PY8MO, PY4J2,
 VK0AD, VR3G, VP8CC, ZK3AD, VY8HL,

[illegible]

OTHER OF INTEREST

ZC5RF - Via VS2 Bureau.
XZ2TH-75 Bogyoke Street, Rangoon.
FB8XX- Via FB8BC
TIZVA-Box 441, San Jose.
FF8BZ-Box 49, Dakar.
KPBAL- Via KPAK or KHS Bureau.
PX1FC- Via UBA. (7LZ)
ZA2ACB- Via DM2ACB (7LZ).
BPTHX- P.O. Box 424, Lodi.

QSL SITUATION

Some interesting QELs have been received for this month, with the resultant satisfied feelings of the recipients.

† Frank T Hine, 30 Abbotsford Road, Homebush, N.S.W.

ZEG, who's looking after 8A's QSLs has received for Chaz: KWS, KLT, GM3, UO, P88
thinning confirmations to 61. 2A1B: EA3FJ
2A1B: EA3FJ, 2A1B: EA3FJ, 2A1B: EA3FJ
CRIC CNJX, LUSAQ, LUNES, H8BZ, VYR
FYTX, 8X4AX, FZ1AH, TG4D, FY2BC, FM
TW, FM TW, ZD8M, T, MCI, 454KH, 23-
24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35,
GJCJ, HBBNB, KLTKK, KP4CC, OZ3PI, 8W
YQJ, UABN, UAIVB, VE1PK, Z58ALU, 20W:
PQ1H, L21PK, CX1BZ, UCRAB, UA4KGS
2A1B: EA3FJ, 2A1B: EA3FJ, 2A1B: EA3FJ
241, V8CXC, PJ1ME, PG7X, FM TW, FM
TW, VUCL, SP2BC Z5AL, FYTX, FYTX, WYMY,
KJ, UABN, XW3B (7, 14 and 21), UB-
2A1B: EA3FJ, 2A1B: EA3FJ, 2A1B: EA3FJ
VQ6L, H8NB, T8PTE, JAZH, 11Z, KAUSA,
YALAM, Z58SG, HG1E, HP1GD, VK0AB, 20W:
PQ1H, DUAQ, F8R, KP4AL, UCRAB, UR-
2A1B: EA3FJ, 2A1B: EA3FJ, 2A1B: EA3FJ
8BP, KW6CE, KZ5BB, OAFPA, UA3NT, UA-
OKUA, UCRAB, V82BD, ZDZDC, Z52JA, ZK-
ZAL, SV8AB, Red de Baller, U8KAA, 20W:
PQ1H, DUAQ, F8R, KP4AL, UCRAB, UR-
2A1B: EA3FJ, 2A1B: EA3FJ, 2A1B: EA3FJ

LONG-TERM PREDICTIONS FOR SEPTEMBER 1997

Figure 1 consists of 15 horizontal bar charts, each representing a different region. The horizontal axis for each chart ranges from 0 to 30, with major tick marks every 5 units. The vertical axis for each chart shows the percentage of respondents. The regions are listed on the left side of each chart, and the corresponding percentage is shown on the right side. The regions and their percentages are: 1. Australia - NE America SE (28%), 2. Australia - NE America SE (28%), 3. Australia - NE America SE (28%), 4. Australia - NE America SE (28%), 5. Australia - NE America SE (28%), 6. Australia - NE America SE (28%), 7. Australia - NE America SE (28%), 8. Australia - NE America SE (28%), 9. Australia - NE America SE (28%), 10. Australia - NE America SE (28%), 11. Australia - NE America SE (28%), 12. Australia - NE America SE (28%), 13. Australia - NE America SE (28%), 14. Australia - NE America SE (28%), 15. Australia - NE America SE (28%).

My thanks this month to SEG for the extracts
of the log of OAB, TACK who keeps his beam
pointed down in the direction of VRB in the
vicinity of the coast of Mexico. He has been
very content at having completed his W.A.S.
TAMB, TAQJ who is very keen on our S.B.,
work. JAJ still manages to find some DX,
and I hope he will continue to do so for many
years has managed to reach his DX CC, KBJ
not as active the last month and PKX who has
been away from home most of the time. The
BEERSIUS has been kept quiet this month by the
"flu bug. Red de Balfour who with his own
activities report sends in TLZ also. WIA-18930
has been able to get back to work after receiving
receiving equipment as well as not to miss any
sending and finally Cass Thorne, a listener from
the States has been helped through the trouble of
sending me the QTH of SPHX

FIFTY-SIX MEGS. AND ABOVE

(Continued from Page 13)

forgetting Leo SZAG who has successfully worked Ballarat lately, good luck Leo, keep up the good work. Understand the context was made during the meteor shower in late July, so it pays to keep up with predictions on these things and gather in the advantages.

Had a very interesting note from Hughie SBC on his doings up there and quite a barbital from it. Conditions on the v.h.f. have been rather poor of late, with the cold weather about, but there was a high spot on 2nd July when working 3RH on 80; he asked for a check on 2 and his carrier was R5 to 6 at 1800 hours. Of course, I didn't lose any time in checking 2, having several contacts during the evening with 3RX, 3Z, 3ALZ, 3GCN and 3ZCW. The following evening was clicked again—although Melbourne carriers were present they were not workable by phone.

Since this break through the band has been very quiet, contacts have been confined to 3MT, 3ZCZW at Ouyen and 3OZ at Mildura. I have been contacted at other times, but I have recently been transferred to a new station and so I shall be on 3MT, so looks like another station for me to work up here. Also another station, 3MT, has been transferred to 3MT, had a check last night on his signal, was 3MT, 3MT, 3MT. Understand this chap has a very good set-up with his beam up on a 100 ft tower on a hill, and he has a very good signal. I have my 36 Mc. to fixed up again, and I hope the chap wants a check I am available.

Thanks Hughie, it's some time since we had a run through from you and in your capacity of intermediary between VKIs (Central) and VKIs (Northern) any information like the above is useful to those of us who are trying for better things on E.

It is hoped by next month to be able to give some details of the "Moon Watch" possible arrangements as they apply to S.A., but of course, as the time when this is now scheduled is well into 1954 there is no urgency about planning. All the same, as soon as known, we shall be glad to direct you to those who have indicated willingness to cooperate or through these columns. The 108 Mc. is still the frequency so in building 144 Mc. gear it may not be a bad idea to provide a change to the 108 Mc. design which will save some money and give you a converter if you take the "Watch" on. —JCT

WESTERN AUSTRALIA

The June V.h.f. Group meeting was held at Ralph EZAD's QTH. The attention of the meeting was taken up with the constitution of the Group, as this has taken a long time to get together. It was a welcome relief to members when the last of the business was made by the vote of the new constitution. It should be a fully constituted body. Since the meeting advice has been received that through the courtesy of D.C.A. we have been granted the use of the training school lunch room for meetings. This will relieve members QTHs which have been badly overcrowded by large attendance at meetings.

The 388 Mc. Tx Hunt on 28th July was a great success. 6ZAV being the fox, Ralph played a good game alongside Syd and Rollo. The winner was Don 6HK, followed by Rollo 6BO and Dennis 6AW in that order. Syd 6SJ got in by the process of elimination with a rx that wouldn't work and Don 6ZAV struck trouble at the start when a faulty joint on the regeneration control came ashon. This was remedied in time. Ran a half-on-wire twisted back-up, only to find it up on the wrong side of the river. Well, well. Never mind. It was a good night. 6ZAV

time in G.M.T., readability and signal strength, christian names of operators of stations contacted. Applications are to be sent to ZLORT, Mr. A. G. S. Bradfield, 70 Te Awe Awe St., Palmerston North, New Zealand.

VU2JA is the sixth call sign held by Joe Fattibene, who 36 years ago as active Ham the others having been VU1HA, V3SAA, VU7AA, MP4BAF, and VU2BX. Joe has now "retired" to finish off his days at 18b in Woburn Road, Bangalore, V. India, where VU2JA is kept active. Joe worked many VK stations as MP4BAF, on Bahrain Island, and says not all contacts were QSL'd by the VK operators. He would welcome those outstanding, if sent to his India QTH and will QSL himself any of the contacts for which cards have not been received. Joe used a 40w, two-stage rig at MP4BAF, coupled to a window aerial, and worked mostly 14 Mc. c.w. As VU2JA, he seeks contacts with VK stations, using both c.w. and phone on 14, 21 and 28 Mc. bands. Info supplied by BRK316.

J. James, VK3RL, Manager.

NEW SOUTH WALES

The July meeting of the N.S.W. Division was held at Science House, Gloucester St., on Friday 28th. The meeting was the best attended for some time, there being present, among whom were many of the well known Amateurs who have taken an active interest in Institute affairs over the years.

The chairman was the recently elected President of the Division, Pierce Healy, A4PQ, who expressed his appreciation of the trust placed in him by being elected to that position, and indicating that the new Council will endeavour to foster the real Ham spirit among all who are associated with Amateur Radio.

The lecture for the evening was given by Mr. R. Mondel, Supervisor of the School of Electronics and Communications. The subject, "The Importance of Impedance Matching," dealt with the following points: Mismatch of transmission lines, reflection co-efficient, standing wave ratio and power transfer, ghosting on t.v. signal.

Mr Mondel gave the most enlightening lecture by explaining the make-up of a transmission line and formulae used to calculate the power loss in transmission lines, showing how standing waves are produced and what standing wave ratio could be tolerated before severe losses became apparent. The discussion on ghosting of the t.v. picture by a mismatch in the transmission line brought many questions from members.

A hearty vote of thanks was given to Mr. Mondel for an excellent lecture.

Council were pleased to receive from the retiring Treasurer, Victor Cahill, 2VC, the offer to carry on for the next few months and have co-opted him as the seventh member of Council.

Our Engineer, Dave Duff, 2EO, has been rewarded for his efforts on the 2WI tx at Dural, from the number of reports received that the improvement Dave has made has appeared that a very good signal is being radiated.

W.I.A.

SOUTH WEST. ZONE N.S.W.

FIFTH ANNUAL CONVENTION

at COOLAMON

26th and 27th OCTOBER, '57

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Programme:

Saturday, 26th October—

Afternoon: 144 Mc. Tx Hunt,

Sit-Down Dinner.

Evening: Amateur Hour, Films,

Novelities.

Sunday, 27th October—

Morning: 144 Mc. Tx Hunts,

All-Hand Scramble.

Afternoon: Barbecue, Novelty

Events, Auction Disposals.

★

Book Early for Accommodation

Ray Hart, 2HO, C.D.E.N. Co-ordinator, has been invited by the Director of Civil Defence to be one of the N.S.W. representatives at Macedon, Vic., in October this year. Ray will represent the N.S.W. Division at these discussions.

New members admitted at the July meeting were C. Fryer, RNZ, A. K. Hore, 2ZCH, W. W. Dixon, 2OZ, as full members, and R. E. Howard, D. F. Edwards, D. Shaw, D. M. Grantley, D. W. S. Shepherd, C. Foster as Associates.

HUNTER BRANCH

Fourteen members of the Branch attended the July meeting at the University of Technology, Tighes Hill. Various matters were discussed and it was unanimously decided that the Hunter Branch Field Day would be held on Labour Day week-end each year, as in the past.

The Branch President, Lionel KES, gave a lecture on Civil Defence as it affects Ham Radio.

Congrats to Harry 2AFA who has now only about 10 conformations to get and 6 to work for his DX C.C. Bob 2AQR has had his Boy Scouts chasing over Mt. Sugarloaf after "flying saucers," but general opinion is that clouds are being ignited by r.f. from Bob's Tx at "Wesley." Varley 2B, being congratulatory on a nice drop of about 40 on 40 Mc. 24Z, we don't hear much of 20Z these days, but Johnny says he still gets on 31 Mc. at times. After long absence, George 2AGD has hit the rig going again, and up to his old standard.

Treasurer Bill 2XT with Secretary Charlie 2ARV and Ernie 2TP to keep them on 31 Mc. straight and narrow, made a car trip to 2WI at Dural to meet new Div. Council and made some 7 Mc. mobile QSOs on way. Incidentally, Ernie 2TP with his pair of 840s is still working them on 19 mc but finds Southern Hemisphere DX is hard to come by. Preparing for holidays on VK Gold Coast.

24Z's "Do Me," is Harold 2AHA and family. Another to leave is Assoc. Sid Daniels who is to forego his 100 lbs. for health & legs, photographed at Calms and Barrier Reef. Social Sec. Assoc. Gordon Sutherland, has acquired a Marconi 3BB Tx and very happy with results. Dave 2BS has been playing with t.v. antenna and his latest effort uses a copper mesh reflector which works 1b. Ben 2ABJ getting good QSOs and QSLs from Ws on 30 mc phone and c.w., a recent visitor to 2ABJ was "Bush Ranger" Ben 2ABT from Coonabarabran who stayed with brother-in-law 2ZL. Ben had misfortune to have a collection of WtH car laid up for a few days, Jim 2ABT came to rescue and took Ben around. Most startling news for years was the Bill "Embrandt" 2ZL has become a DX hound. Bill laid aside his paint brush and worked nothing less than HF on 40 mc phone, also received a c.w.l. card from OK.

The next meeting of the Branch will be held at the University of Technology at 8 p.m. on 13th September.

SOUTH WESTERN ZONE

Main activity here seems to be on 344 Mc. as John 2ZDP and Keith 2ZBP at Ellaboo have more or less nightly seds with 2AJO. Both are talking 36 Mc. Jim 2ZBP has a tx working on that band on 34.475 Mc. Your scribe has the pleasure of a 10 min 36 Mc. QSO on 31st July with Keith 2ZAA at Tumut, 2ZAA's first 37 Mc., 2AJO's 36.8 Mc. Many thanks for contacts on Keith.

Don 2RS at Albury has been keeping seds on 344 with VK3 and VK2 with fair success. Don is building bigger and bigger 2100 Hz. beam, in offset opposition he is getting from 2QR 2ZU and 2AEM.

Stewart 2PL at Griffith had a short spell in hospital, nothing serious, under the type 3 on c.w., said the curtain rod made a good antenna. John Smith now has full call. RNZ Congrats John. John is using 30 WtH AT3, 2AAXD test also heard, still with gravel voice modulation (sit down, Ted). Lon 2AQE at Wagga has been heard a lot.

Things are well in hand for this year's Convention at Coolamon. Programmes are being printed, the hall is reserved, and the caterers advised.

VICTORIA

On the last meeting, 7th August, 1957, our President was laid aside with the flu, which he very bravely and gallantly overcame. Gordon 3TF, our immediate past President, took the chair. Every good wish for a speedy recovery Fred.

The meeting was well attended despite the wet miserable night and it was easy to see that the elements held no terrors when a lecture on home brew t.v. receivers is in the wind.

Providing you were there early enough to miss the crowd, the first thing to greet the eye on entering the lecture theatre was Loran c.r.o. giving forth a very creditable t.v. performance, a thing quite foreign to its normal role in life. However, as the crowd rolled up, the c.r.o. disappeared under a sea of heads and the performance was from outside appearance, more akin to being around a honey pot. Needless to say the acting President had his work cut out even starting the meeting.

The lecture was placed at the beginning of the meeting, a very wise precaution in this case, and we were soon on the way to hearing the ins and outs of the construction of a television receiver, from disposal equipment.

With much foresight the lecturer had decided to launch his subject from the beginning to cater for the novice and the expert alike and by means of a block diagram he very skillfully stored his audience through the usual maze of t.v. circuitry with the greatest ease. In fact, thanks to his aridity, those of us who had not previously studied the subject at length were saved much travel along blind alleys and many gallons of midnight oil.

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manufacturers are quite happy about the sales return as a result. 35V has made a heterodyne frequency meter and has ambitions to follow with an audio amplifier. There's a desire to be thwarted by the absence of a laborer unit so if anyone can help—need more be said?

During the last hook-up your correspondent attended, Roy IND used his system for carrier wave modulation running 7-15w, to a 6V6 807 combination with 1 volt on a carbon mike for sound. This was not alone but also had the Duke air, it still did a remarkable job although the extra volt supplied later did help. SARB has been on 15 mx without much success, but it has not alone been a little time to settle down and we might all have some success on that band, which is desirable. His time is almost quite up.

Although 1V, has had many a curse heaped on its head by erstwhile DX'ers, it has been the means of bestowing blessings on Con 3FO, who has been busy installing many monitors around and about the fair town of Malden. Visitors to that town may see an aerial which is obliquely polarized being somewhat of horizontal, which is why it has been so successful. Very well. Purely accidental might add, but most great discoveries have arrived that way. If a spare moment offers itself Con delivers into his mind a recital of the things he has done in this description may be attributed to journalistic license and a bad memory. Neville JACK found a 1000 ohm resistor in a box of 20 500 ohm resistors, having far too much left, but by the time these items are printed that trouble should be cured. The home-brew slicer for reception of weak signals, which Con 3 takes a lot of hard work out of making sense of s.b.s. signals.

QUEENSLAND

Since the last "A.S." notes went to press, we have had the usual Council and general meetings as well as the monthly hidden tx hunt.

At the Council meeting, which in the past has always been very well attended, Aussie ATN had a report on the progress of the new accountancy style, of the Convention Fund. After all payments were made, we found that there were a couple of db. down. This, the Council members, requested reasonable donations and expenses were well over the century mark! We had thirty pounds in the fund when we started, but the donations and expenses, specially given, and from the sale of gear given by members to the Institute. Our convention fund now stands at twenty-eight db. All donations for the past year will be a bigger, better and brighter convention, would, of course, be gratefully accepted. Aussie having first hand information, would use as how he could, in future, clip our expenses to that next year's convention would show a slight profit, or at least break even financially. There were not many large accounts Aussie pointed out, but when a large number of small bills have to be tallied up, the expenses have a habit of rapidly mounting up. Anyway, Aussie, many thanks from Council and Hams generally for your co-operation and for the many hours spent in organising the whole show. Aussie, many thanks from Council and Hams generally for your co-operation and for the many hours spent in organising the whole show. Aussie, many thanks from Council and Hams generally for your co-operation and for the many hours spent in organising the whole show.

In an attempt to learn from our mistakes, and to make the job of Treasurer less complicated, Jim 40B put forward the scheme of creating a separate fund for the Convention, labelling it "Convention Fund." After listening to the many reasons, which you would have heard had you attended the last general meeting, members did, provided the fund for this account were made up of donations and from the sale of gear given to the Institute. The fund now has three accounts. No. 1 is a working account and is usually empty. No. 2 is a savings account into which we frequently make deposits. No. 3 is a reserve fund. This account is usually a very healthy one. No. 3 account would then be our Convention fund.

Our emergency deal is still very much alive, and the scheduled date for our first run is 20th August, or if things don't pan out, then 27th August. However, boys we have been talking about this emergency deal for some time, if you haven't your gear out and going by this, then be it on your own heads.

There is to be another emergency meeting immediately after the first Council meeting, and it should prove to be historic, for the final plans will be cast for our Amateur C.D.E.N. We have an emergency boys very successful in their venture. The Hams in Queensland will extend their co-operation (within the meaning of the Emergency Regulations) to VKA and to the C.D.E.N. a valuable service to the community.

A recommendation that Council discuss the future pattern of meetings was made by 42AE. A considerable amount of time was frequently wasted up in the discussion of matters not relevant to the actual business of the Club. Consequently the meetings often progress deep into the night, which naturally leaves any following members with very little time of time. There are many other issues which could be discussed perhaps by the counter-part of a public relations committee and so on. However, the recommendation for meetings, perhaps streamlining would be a better phrase, would then place greater accent on social matters.

A gentle reminder about the R.D. and the Ross Hull Contests. The R.D. Contest will be well over when this goes to press, but it is hoped that this year could be better response than the thirty logs that were submitted last year. Don't leave it until too late to get cracking for the Ross Hull Contest. Don't stay of the air thinking that you are giving the other fellow a chance! Chances are that he will be doing the self-same thing. Good hook-up on Sunday mornings with the country boys, too. The round table is getting bigger as each week goes by. Unfortunately, the 42 who has been supplying more for the boys will be going to the States and will not be available for some time to come. Many people who took advantage of the round table in the past have been the regular list of 42P. Pounding that key was truly appreciated!

However, boys, don't despair, Bert hopes to have 4WV, for more transmission, very shortly. He has been putting a lot of work into the station's rig and although it has taken quite a time to get things into their shape, the station equipment will be versatile and reliable. Good work, Bert.

Ren JACK asked Council if the Postmaster General's Department could be approached in an effort to speed up the releasing of examination results and the granting of call signs. Some V.I. has been waiting for a considerable time after the examinations before they could get cracking, and as a result, the first full bloom of enthusiasm has started to wear off. We are sure the same boat at one time or another, but Council will see what can be done for future examination candidates.

To date we have had no news concerning the Federal Convention held last Easter. A request for advice of the results was sent, but we anticipate that it will be some time before the full report is available.

At the last general meeting we were fortunate to have the services of the Hams V.I. 4VJ, Aussie ATN and John 4FF. The all described the preliminary horrors that each budding mobile Ham. However, the boys made the subject interesting enough to claim a few more fans. A recording was made of the lecture and it is hoped to present at a future date some articles for Amateur Radio. A start has been made, so how about it boys? You don't have to be a literary genius to write an article; if you have some interesting circuit, as you've tried, jot it down (readable at least) and we can get the diagrams put into presentable form for publication. They have to be a certain size, etc. Please look at the articles in through 63EJ, G.P.O. However, reverting to the subject, most of the lads were intrigued by the novel idea of a mobile station, and a converter to work multi-band. Very clever application there, Vince. Thanks to you Aussie, Vince and John for a very entertaining and informative evening.

The last V.H.I. Tx Hunt was hidden by Jack 4JO and a crew of helpers on top of White's Hill. It was a most successful and was a most deceptive! It was won by Les 4JH and his XYL in some 27 minutes, with John 4FF hot on their heels. Once there, several willing workers started to sort and wash, long before the boys made short work of the cakes and sandwiches provided by Mrs. 4JO, Mrs. 4JH and the other ladies. It rounded off the evening beautifully.

MARIBOUGH

4DJ still building his rack and panel rig, is heard DXing on 14 Mc. and is often on 40 mx. Graham has bought a new receiver, Arch 4CB building a table-top rig with a Gelson v.f.o. driving a 418 with pi-coupled output. Looking for a place to get a room on the ground for months, will soon be up on the 60 ft. tower.

4BG will be combining his two beams in tri-beam, but meantime is still rising early for those elusive new countries.

TOWNVILLE

Quite a successful meeting was held at Graham's 4BX and it was nice to see the

boys coming along, after previous difficulties in obtaining a quorum for the meetings. It was decided to purchase suitable disposal gear to the value of £35 for the benefit of members, who will be able to take the best of plus a very small percentage to help along the financial resources of the club. After discussion, when the time came, the boys settled down to hear a lecture by Bob 4RW on "Electrocution." How easy in the Ham shack. Notes were placed on the blackboard to show the various points which will be covered, and their probable effects. Great stress was given to the condition which is a sure killer—heart arrhythmia. The lecturer also stressed artificial respiration be performed in all cases of electric shock. After the lecture numerous questions were answered and some members reported on how they had taken the boys when they came in contact with voltage in the shack. Ted 4EJ then showed many coloured slides which had taken around Magnetic Island. Ed 4WH, the Secretary, also brought along slides of the Barrier Reef.

Two new members were admitted to the club, namely Bob Ceway, 42AZ and Nick Watling 4WT. Eric 4EL is still striving to work the DX and landed a F8T on French St. Martin, nice work. John 4DD, Allan 4EJ, and others are trying to get a licence, but have not got an 8 point on 10 mx working into England. Quite surprised to hear a come back to the boys, who had been told that they had to get a licence. Now that the gum has again taken hold Len, what about coming to the meetings. Arthur 4FE, on the Island of Dook, Malden, and how he's pining for a licence, but is waiting for fish, no reports on how it is trading for keep them biting.

Keep going on a motor holiday down south and promises to call on the various stations he has worked, whilst Bob 4RW hopes to be in Rockhampton first week of December, report on how he's been, but not locked away. He then hopes to tour the Tablelands going as far north as Cook, and then to the Blue Mountains. The Bureau on 1st July. Hope mine is amongst them. Only two new countries worked this month at this shack were HTL/MK (Dominica) and UG 4B. The boys are still working on the three new transceivers arrive for 4JL, 4EJ and 4DK, who were successful in the recent ballot for them.

SOUTH AUSTRALIA

For some time now your Council and particularly the Programme Organiser have been wondering if the "lender" might be as popular as it was at first. It might be a little too early to tell, but the attendance at last month's effort for that kind of programme gave the complete answer, for not only was the crowd a new record, but the gear offering was good in quantity and variety and the bidding brisk. It is apparent that there is still a good list of items about to be changed back to advantage. Your Programme Director will see to it that the ever-popular programme is repeated with the same enthusiasm.

Our thanks go to Brian 5CA, who so ably stood in for Douglas 4BEY, and Norm Cottrell for their efforts to keep the show running. It's not an easy job, but those two (corrected three) fellows have the right approach and keep the ball rolling.

There is some normal business conducted at the meeting, but it was not of great import, so was not given more time than just to get it over with. On Sunday morning, a letter from 5W1 outlined a few advantages of membership and facilities available to members which could be of great help to those who have any various instruments for loan, in some cases, or for use at the Custodian's QTH. Doc 5MD, Mrs. 4E, and a mod. cos. were present and members for checking any valve you might be suspicious of. Access is available to a library of various books of interest, including up-to-date technical books. If you are not sure, so don't go short of an address for that odd special QSL card. There are technical committees available for consultation, and if you are you may have been to do with some gear you are planning, or b.c.i., or the like, this committee comprises members familiar with the problems of the various bands, and call on for aid. And then finally make use of this magazine to express your views on the hobby, don't be backward in coming forward, and let the boys and the editor know what you make, a new gadget you design, by doing an article on it for the magazine. Help the boys and the editor, and at the same time contribute when you can.

An outstanding item of interest of recent times was the splendid and efficient aid provided by two prominent members at Victor Harbour, namely Pat SKM and Ron SKN, who between them set up a base station and a mobile one at the scene of search and rescue operations. When the two boats were lost their lives whilst searching the coastline. Pat and Ron, both prominent in affairs at Victor Harbour, were appointed by the Police and Bushfire Net to set up such gear and throughout the operations were able to afford efficient ground to ground and ground to air communication. The two boats were set up. The Authorities aided by providing phone lines as required and granting authorities for the operation on the allotted channels.

It is certainly pleasing to know that our members spontaneously provided this service, which in operation met with high regard from those associated with the rescue. Congratulations to them both for bringing Amateur Radio to the notice of the general public in such a favourable light, and for their own strenuous efforts.

Congratulations Jim BJN on your appointment as C.D.E.N. Co-ordinator for S.A. The above paragraph will give you some idea of how the boys will be working. Jim and just what can be expected. We may not all be as well set up as SKM and SKN were, but at least we can give them a deep breath of movement to be ready if called on.

Congratulations also due to Bill SZAX on his appointment as Assistant Secretary of the Division. Bill has been in the Division and you won't regret the experience.

As well as the usual rounds of locals worked this month, Peter SRB bales up on 40 mch a very fine signal, an ex-VK who now lives at Modbury, and reverting back to the meeting some new faces seen in SEU, SJS, SDS, and SHA. OK fellows, but wear your name cards. It's a good means of introduction for many of us know the voices only, and like to meet up in person.

A recent contact with Col RO BROUGHT out the information that he is playing with d.b.b. Heard any funny sign lately? Ken SKC also going to give the same idea a go soon, and who is going to be first up on d.b.b.?

Ron from FWC has put the mike aside for a moment and is now working a bomb-40 wheeled variety—don't know if it incorporates any mobile gear, but can't think that would be left to the boys. The boys are still active and looking for contacts in spite of the continued high noise level there.

Ever heard of Lloyd SKC on 40 mch phone? Well, if you try you will, very good signal too. John BKX has strange visitors in his shack some Sundays, one Wal SDE was there recently and John couldn't reach the voice control fast enough to keep Wal's 199w. voice in tab.

Both Len SO and Stewart SMS heard recently working DX in great style on 80. Len W-wise and Stewart G-way. Understand Stewart has erected a new skywire (the 17th), what is it this time? Erg SKU had a bout of the flu which kept him quiet for a while, but on resuming operations celebrated the return by blowing up his main power supply, so is still silent. When SAE and Claude SKH announced to announce, Claude SKH has picked out himself a 33 ft. tower which together with a new chair will keep him busy for a while as he may curdle hammer somewhat. Don't let them get you down Claude.

In the course of nosing about on business, yes I still work for a living, came across a certain amount of interesting information. I was at a place where gears are cut, not far from a large brewery, and believe it or not there was clear evidence of either excess late

hour DX or power failure at shaving time. Mind you it was only Tuesday and the stubs were about quarter of an inch, and it was worth seeing by Friday. Keep me informed on that type please Charlie.

WESTERN AUSTRALIA

At the July meeting of the W.A. Division Mr. R. W. English, the President of the W.A. Astronomical Society, lectured on the part to be played by his Society during the International Geophysical Year, and the ways in which the Institute can assist in the programme.

There is not much to report this month. Apart from the usual annual overhaul of gear prior to the R.D. Contest, portable and mobile operation at week-ends is still very popular. The No. 11 contest has given good results, and GJG has shown what can be done with a 161, really "going to town" with an excellent 3w, phone signal. Nice work Ted! FTH was working portable from Collie with a 132. After a long spell QRT, 6AH popped up on 40 mch with a Type A and a few watts, but had some gear going big rig going and promises to be more active. The Institute has GFD got his new modulator going f.b., then went down with flu, but is about once more. GTH has been experimenting with a ZL special and working into N.Z. and Africa on 30 mch. Both he and GJG formed the double dipole version.

The c.w. stalwarts, 6DJ, 6UF, 6GA, 6BE and 6EJ have been joined by a newcomer 6AJ, whose old call sign was GJXJX. We were glad to welcome him to the Institute meetings, and on the bands his list is a treat to copy, as one would expect from an enthusiastic member of the c.w. club. C.W. 6BZ has 80 mch. Improving signal from Eastern Australia, Tasmania and New Zealand all being worked at surprising strength on phone.

Up to the end of July, the Sunday morning broadcast from SWI has given good coverage on 40 mch, but it may be necessary to put it out on 80 mch soon, as roll up with reports after the news as we want to reach all listeners.

Frank and John Hill spent a week-end with 6EJ and were surprised how well the other 6AH came through on 40 mch from Wiluna. They were taking a well earned holiday, after having attended a farmers' course at Murrumbidgee, and after returning to the "wide-open spaces."

VK8 Riders—please do not forget to fill in the form attached to the Bulletin concerning C.D.E.N., and post it off to 6MK.

OBITUARY

ERNIE LANGENSCHIED, VK8EL

Ernie Langenschied, VK8EL, of Geraldton, W.A., passed away on 16th July. Ernie obtained his ticket round about 1927, and was very active in the metropolitan area on 40 metres for local and 10 metre DX. He had a lot of friends in Europe whom he used to contact on 10 metres. In 1948 he moved to Geraldton, and set up a lot of amateur work. He had not been heard very much during the last few years. He was a well known and very friendly person, to whom our sympathy is extended.

TASMANIA

Bob's first 144 Mc fox hunt at night was a busy sort of show, wherein we spent an hour chasing reflections from Mt. Wellington with passengers briefed to keep watch for "LE's" Wolsley. Perhaps the most consistent signal was heard by Bob TOM, closely followed around the place by another competitor on an Austin van. The fox was not the affords van came home, with the old fox himself at the wheel. No mistake was evident, however, in the way we stood-in afterwards on various bits of ground around the fires (this is not an oblique reference to any particular person), and there were many returns to Mrs. Edwards' brew of coffee.

Fred TPC gave the July meeting a preview of some high speed carrier line techniques which are being put into use by the Electric Commission.

Support is apparent from many parts of the State for an early start in the practical training for C.D. work, initially using home stations and introducing portables as they become available. Subject to P.M.G. approval it is proposed to exchange batches of dummy traffic in nets as arranged by Co-ordinator TOM, in a way which will permit an element

of competition based upon accuracy and transit times. It is hoped with the idea of competition to preserve interest in the job while building up a working organisation of trained operators who can accept emergency traffic as a matter of course.

With a remarkably cold winter already slipping by, there are tentative suggestions for a hamfest at Lake St. Clair, where a lot of snow was had last year setting up the works to handle the Olympic messengers. This could well become an annual event. If a firm date can be fixed far enough ahead, perhaps some of you interstate chaps would care to hand the Cadillac over to Customs and be in it come in something else, because they're still building that drive-on ferry.

NORTH WEST ZONE

Our Annual General Meeting is over for another year, and our new President is Sid TSV. A worthy choice. Sid has done a hard job as Secretary. In Sid's place we have Max Ives, an Associate who should keep things moving. Max also has a For Sale and Wanted to Buy Book, so contact him for those odd items.

Dennis TDR still retains the bank book and seems to pursue a policy of all income and no expenditure.

Two Vice-Presidents were also elected, to Sid TSV and Ted TSV. The latter's probable use depends on how late the President is.

Ellis TWA was re-elected QSL Manager, subject to his acceptance.

As we have to live off the premises by the hour of 11 o'clock, the proprietors provided supper and we had the usual auction, which was a success. The usual items were sold. Ted TEJ was auctioneer, as usual, and we closed on time.

Associate members were well represented and displayed their usual lively interest in the proceedings.

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FOR SALE: Unwired Power Supply, contains 1 Trany 710-880v. 250 Ma. 1 Trany 2 x 6.3v. 3a. and 2.5v. 10a.; 2 x 250 Ma. Chokes (Redine); 2 x 866 Jr. Rect. (Taylor). All new. £25 or offer. R. Chalmers, Denman, 3N, N.S.W.

FOR SALE: 7 Element Travelling Wave TV Aerial, as new, £30, airfreight paid. J. Oliver, Latrobe, Tas.

SELL: Eddystone 640 Rk, good order, 1.8 Mc—31 Mc. in 4 bands. £27. Melb. Phone UY 6121, after 6 p.m.

SELL: Type 3 complete. Pair 803a. Bug, AR14 (batt. Rk) Genemotor, 18/500v. 65 Ma. QRT. P. Davies, 31 Jackson St., Toorak, Vic.

WANTED TO SELL: Mod. 522 Tx, 832A final, 30w, in, 6V6 mod, xtal, mic., £15. Mod. 522 Rk, 6AK5, £12. J. Sapir, 1 Kyeamba Grove, Toorak, Vic. (UY 5152 even.)

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10" Cast. Alum. Turntable	£5/10/-
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Paper Recording Tape, 1200 ft.	30/-
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Aurox Recording Tape, 1200 ft.	44/-

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Oak Switches	1 x 11 x 1	13/10
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"	6 x 2 x 2	13/10
"	1 x 11 x 2	23/10
"	1 x 12 x 1	23/10
"	1 x 12 x 2	23/10
"	6 x 2 x 3	31/4

PICK-UPS

Goldring Pick-ups, Model 130	20/- ea.
Acos GP10 Pick-ups	£3/12/6
Acos H6P38 Pick-ups	£5/15/0
Acos H6P40 Pick-ups	£9/15/0

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Toggle D.P.S.T. L/Neck	15/6 ea.
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Speaker Winding, assorted, 5/- doz.	
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Battery Charger Transformers, 6v. and 12v.	25/- ea.
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6v. at 4 amp.	95/- ea.
12v. at 2 amp.	95/- ea.
Battery Charger Selenium Rectifiers: 12v. at 2 amp.	35/- ea.
6v. at 4 amp.	35/- ea.

Crystals	6d. each
Semi-Fixed Detectors	2/6 each
Refills	2/- each

INVERTERS

32v. DC input, 230v. output, 100 watt	19 Gns.
110v. DC input, 230v. output, 100 and 200 watt	15 Gns.
6v. and 32v. DC input, 230v. output, 100 watt	18 Gns.

BLOCK CONDENSERS

25 mfd. 200v.	55/- ea.
0.25 mfd. 400/1500v.	3/6 ea.
1 mfd., 4 mfd. 1500v.	35/- ea.
2 mfd., 0.5 mfd. 1500v.	35/- ea.

ELECTROLYTIC CONDENSERS

16 mfd. 350v.	3/6 ea.
24 mfd. 350v.	3/6 ea.
16 mfd. 525v.	3/9 ea.
8 mfd. 525v.	3/9 ea.
10 mfd. 40v.	1/6 ea.
10 mfd. 25v.	1/6 ea.
8 x 8 mfd. 525v.	2/- ea.
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FULL BAND SPREAD ON THE SIX MAJOR AMATEUR BANDS

By including only the six commonly-used Amateur bands the EDDYSTONE "888" offers big advantages. The expanded tuning scale gives a remarkable bandspread, enabling a frequency to be read to very fine limits. Also the L/C ratio for each tuned circuit can be chosen for maximum performance.

BANDSPREAD. The essentials of good bandspread are firstly a long scale and secondly a good drive mechanism. The "888" offers a scale 12" long and a geared drive mechanism having a reduction ratio of 40:1. With the vernier scale the mean average readings are:

Range	Freq. Limits (Kc/s.)	Kc/s. per division
1.	28,000 — 30,000	2.0
2.	21,000 — 21,500	0.7
3.	14,000 — 14,350	0.5
4.	7,000 — 7,300	0.33
5.	3,500 — 4,000	0.7
6.	1,800 — 2,000	0.25

FREQUENCY STABILITY. Excellent overall frequency stability is given by the oscillator circuit design. Negative temperature co-efficient condensers counteract long-term drift.

BUILT-IN CRYSTAL CALIBRATOR. The crystal calibrator provides marker points every 100 Kc/s. Positive corrections due to any slight circuit variation, are easily made by the use of this calibrator and trimmer condenser.

AUDIO FILTER. Incorporated in the "888" is an audio filter, peaking at 1,000 cycles and having a bandwidth of 100 cycles for c.w. reception.

MONITORING. With Stand-by Switch "off", the receiver is de-sensitised but not fully muted, enabling c.w. and telephony monitoring of local transmission. Stand-by sensitivity is adjustable.

ELECTRICAL PERFORMANCE. Sensitivity throughout is better than 3 microvolts for a 20 db. signal-to-noise ratio (50 milliwatts output, 30% modulation); absolute sensitivity on c.w. is better than 0.5 microvolts.

Selectivity is variable from 30 db. to 60 db. down, 5 Kc/s. off resonance. With audio filter in circuit, a signal 250 cycles off resonance is attenuated 32 db.

Output power exceeds 2.5 watts into a 2.5 ohm load. Image ratio better than 35 db. at 30 Mc/s. and higher on other bands.

AERIAL INPUT. Input impedance, approximately 75 ohms balanced or unbalanced. An aerial trimmer permits optimum results.

OUTPUT CIRCUITS. Terminals at the rear take a speaker with impedance of 2.5 ohms; a panel jack is provided for high resistance headphones.

OTHER FEATURES. A rear socket takes the plug of Eddystone Cat. No. 609 "S" Meter; another permits use of vibrator power pack.

EDDYSTONE "888" Receivers are obtainable from all Eddystone Distributors. All radio receivers are subject to severe import restrictions, and supply is dependent upon import licence availability.

A FULLY DESCRIPTIVE BOOKLET AVAILABLE UPON REQUEST.

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